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DEPARTMENT OF PHARMACOLOGY

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January 3, 1949

Dr. Arthur Kornberg  
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Bethesda 14, Maryland

Dear Arthur:

I have your letters of December 28 and 31 and I am writing to Ohlmeyer along the lines you suggested in the first letter. I also suggested to him that he forget about the Lithuanian Physicist so as not to create further complications.

I am afraid we have used up a great deal of the Zwischenferment that Bernie gave me. I will check on that and while I would like to keep a couple of milligrams I will send back the remainder.

I was glad to hear that you have gotten positive results with the synthesis of F.A.D. and I think it is very interesting to follow it up. From what you say and what might be expected, presumably a similar system is at work as in the case of the D.P.N. synthesis. It was nice to see your letter in the December issue of the J.B.C.

We are certainly trying to get the biotin story on simpler grounds but this doesn't seem easy at present. I have been thinking that if one could get a protein fraction with activity on the phosphorylation system one might perhaps make a start in that direction. Recently we had an unexpected finding, namely that biotin deficient cells of *L. arabinosus* contain five to ten times as much D.P.N. as the bacteria grown in presence of enough biotin. This was true whether the D.P.N. was determined fluorometrically by Huff and Perlzweig's method or enzymatically using alcohol dehydrogenase, flavo protein and dichlorophenol-indophenol. While this difference might to some extent be due to differences in extractability it might also mean that biotin might be involved in D.P.N. metabolism. I wonder whether this vitamin may not be concerned with systems such as the ones you are investigating and, on the possibility that these systems may indeed be related to aerobic phosphorylation. I will let you know of any further progress we may make and we might then discuss whether some common effort would be profitable.

Dr. A. Kornberg

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January 3, 1949

Before I close, let me thank you for the yeast which arrived in good condition last Friday.

I am enclosing a copy of Grafflin's test for oxalosuccinic carboxylase.

With our fond regards to Sylvia, the children and yourself.

Yours,

*Severo*

SO:ims

Severo Ochoa

P.S. Much to my consternation I find that there are only a few mg. of Zwischenferment left. I am sending it back.